Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 8-27 are pending in the application, with claims 8, 16, and 21 being the independent claims. Claims 1-7 are sought to be canceled without prejudice to or disclaimer of the subject matter recited therein. New claims 8-27 are sought to be added. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Objections to the Claims

The Office Action, at page 2, objected to claims 4-7.

> Claims 4-7 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend upon another multiple dependent claim. See MPEP § 608.01(n).

Claims 4-7 were canceled without prejudice to or disclaimer of the subject matter recited therein, thereby rendering these objections moot.

Objections to the Drawings

The Office Action, at page 2, objected to the drawings.

> The drawings are objected to because some of the labels are not in English. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application.

Figures 1-8 have been amended to replace the German language labels with English language labels.

Accordingly, Applicant respectfully requests that the Examiner reconsider and remove her objections to the drawings.

Applicant submits herewith four (4) annotated sheets showing the amendments to Figures 1-8.

Applicant also submits herewith four (4) replacement sheets as formal drawings for Figures 1-8.

Objections to the Specification

The Office Action, at page 3, objected to the specification.

> The disclosure is objected to because of the following informalities: None of the equations appear in the specification. Because none of the equations appear in the specification, the specification also therefore lacks sufficient antecedent basis for any of the steps of the claimed method for detecting and measuring the phase of response signals of a bio-system.
> Appropriate correction is required.

In accordance with 37 C.F.R. § 1.52(d)(1) and M.P.E.P. §§ 608.01(V) and 608.01(q), Applicant submits herewith a substitute English language translation of the German language application and a statement that the translation is accurate. The substitute English language translation contains the equations that are included in the German language application.

Furthermore, because a complete English language translation of the German language application was not filed by May 14, 2006, the statutory deadline for replying to the

Notification of Missing Requirements Under 35 U.S.C. 371 in the United States Designated/Elected Office (DO/EO/US) that issued on November 14, 2005, this patent application has unintentionally lapsed into abandonment under 37 C.F.R. § 1.52(d)(1). Accordingly, Applicant submits herewith a Petition for Revival of an Application for Patent Abandoned Unintentionally Under 37 CFR 1.137(b) (Form PTO/SB/64) with the fee required by 37 C.F.R. § 1.17(m).

Therefore, Applicant respectfully requests that the Examiner reconsider and remove her objections to the specification.

Rejections Under 35 U.S.C. § 101

The Office Action, at page 3, rejected claims 1-3 under 35 U.S.C. § 101 "because the claimed invention is directed to non-statutory subject matter."

> Claim 1 recites, "Method to detect and measure the phase of response signals (y(t)) of a bio-system". However, the measurement of the phase of the response signals is nothing more than the execution of a mathematical algorithm, since the claimed invention fails to transform an article or physical object to a different state or thing, nor does the claimed invention produce a useful, concrete, and tangible result, since the phase of a signal is not a useful, concrete, and tangible result. See MPEP 2106 IV C 2.

Claims 1-3 were canceled without prejudice to or disclaimer of the subject matter recited therein, thereby rendering these rejections moot.

Rejections Under 35 U.S.C. § 112

The Office Action, at page 4, rejected claims 1-3 under the second paragraph of 35 U.S.C. § 112 "as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention."

> Claim 1 is labeled as a "Method to detect and measure the phase of response signals". Step (e) of claim 1 results in the determination of the phase of the signal, wherein step (e) recites, "whereby the result of this integration represents the signal's phase". It is therefore unclear what the purpose of step (f) is or how the "break-off criterion" achieved in step (f) is related to the phase of the response signals.
>
> Claim 1 further recites "the measured phase" on line 3 of step (b) and on line 1 of step (c). It is unclear whether this "measured phase" is the phase that is "to be determined in step (a), it is unclear how the phase is then measured, since the purpose of the claimed invention as a whole appears to be the determination of the phase of response signals. If the "measured phase" is different from that in step (a), it is unclear what the "measured phase" refers to.

Claims 1-3 were canceled without prejudice to or disclaimer of the subject matter recited therein, thereby rendering these rejections moot.

Allowable Subject Matter

The Office Action, at pages 5 and 6, includes the following statements about allowable subject matter.

> Due to the multiple rejections under 35 U.S.C. 101 and 35 U.S.C. 112, 2nd paragraph and the existence of multiple dependent claims which have not been further treated, no statement of allowability is being issued at this time. However, the following is a description of the most relevant prior art and its relationship to the current invention:
>
> US Patent No. 3,621,405 to Carlsen teaches a method of detecting and measuring the phase of response signals of a system including (a) multiplication of the response signal whose phase is to be determined with a first factor and (b) multiplication of the product of step (a) by a second factor

represented by a trigonometric function (see entire document, especially col. 1, line 62-col. 2, line 44 of Carlsen). Carlsen lacks the system being a bio-system, the argument of the trigonometric function resulting from the product of the frequency of the investigated response signal times the time, added to the measured phase, whereby the frequency of the trigonometric analysis function corresponds to the frequency at which the phase is to be determined or that deviates from this frequency by a known amount, or any of steps (c) through (f), as claimed.

US Patent No. 6,589,189 to Meyerson et al. teaches a method wherein the phase of response signals of a bio-system are detected and measured (see entire document, especially col. 11, lines 1-17 of Meyerson). However, the determination of phase of Meyerson includes none of the claimed steps of the instant invention. While it would have been obvious to one of ordinary skill in the art to use the method of Carlsen as that of Meyerson, the resulting combination would still lack the argument of the trigonometric function resulting from the product of the frequency of the investigated response signal times the time, added to the measured phase, whereby the frequency of the trigonometric analysis function corresponds to the frequency at which the phase is to be determined or that deviates from this frequency by a known amount, and any of steps (c) through (f), as claimed.

Therefore, the prior art lacks a method of detecting and measuring the phase of response signals of a bio-system, wherein the argument of the trigonometric function results from the product of the frequency of the investigated response signal time the time added to the measured phase, whereby the frequency of the trigonometric analysis function corresponds to the frequency at which the phase is to be determined or that deviates from this frequency by a known amount, and any of steps (c) through (f), as claimed.

New Claims

Applicant has added new claims 8-27. Support for new claims 8-27 can be found throughout the specification of the present patent application including, for example, at figure 3. Embodiments delineated by new claims 8-27 produce useful, concrete, and tangible results and particularly point out and distinctly claim the subject matter of these embodiments. Neither U.S. Patent No. 3,621,405 to Carlsen *et al.* (hereinafter "Carlsen") nor U.S. Patent No. 6,589,189 to Meyerson *et al.* (hereinafter "Meyerson"), alone or in combination, discloses, teaches, or suggests all the features of any of new claims 8-27. Therefore, each of

new claims 8-27 is neither anticipated by nor unpatentable over any of Carlsen and Meyerson, alone or in combination. Accordingly, Applicant respectfully requests that each of new claims 8-27 be passed to allowance.

Conclusion

All of the stated grounds of objection and rejection have been accommodated or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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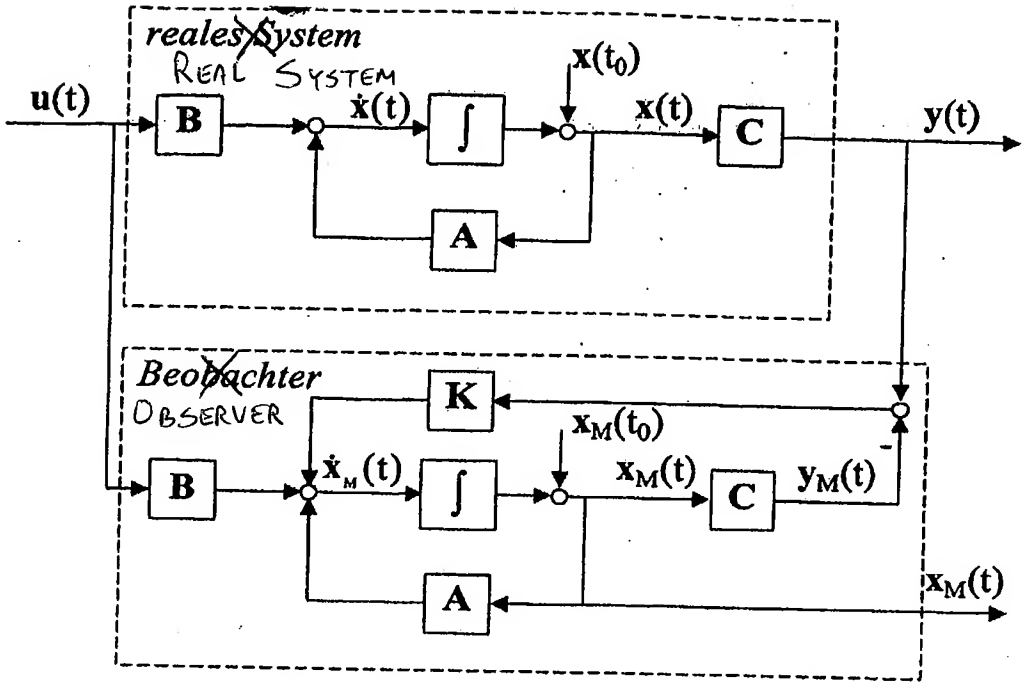
reales System
REAL SYSTEM
u(t)
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ẋ(t)
∫
x(t0)
x(t)
C
y(t)
A
Beobachter
OBSERVER
K
xM(t0)
ẋM(t)
∫
xM(t)
C
yM(t)
B
A
xM(t)

Fig. 1

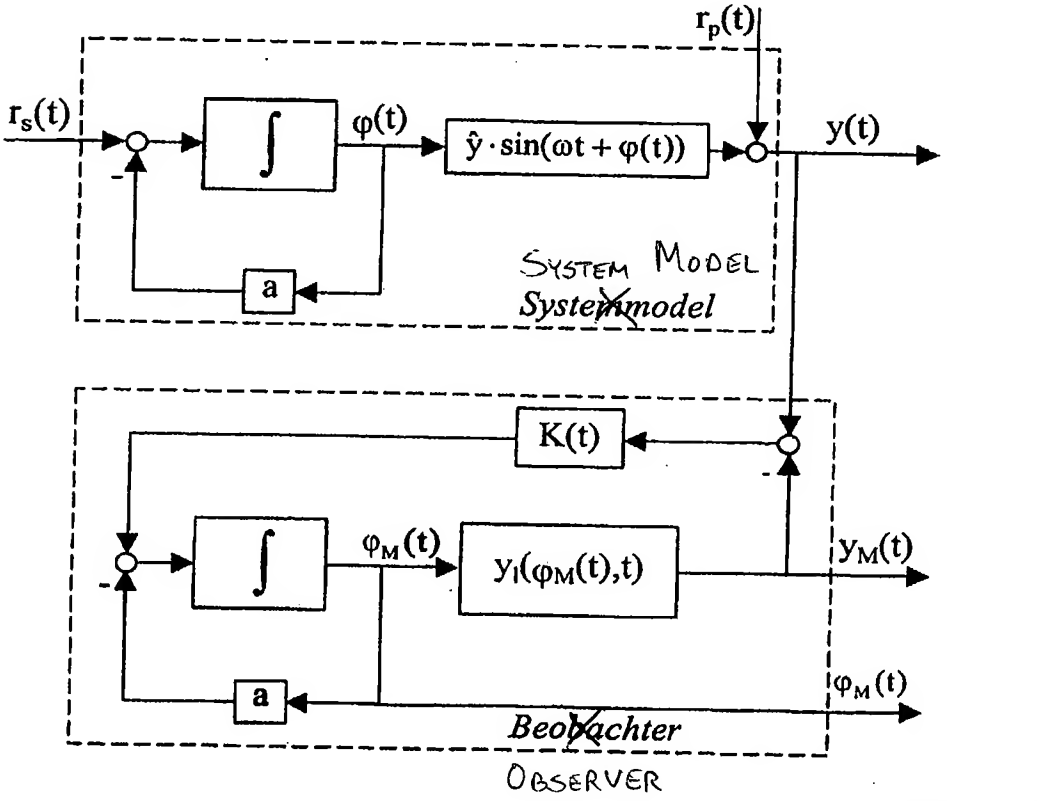

rp(t)
rs(t)
∫
φ(t)
ŷ · sin(ωt + φ(t))
y(t)
a
SYSTEM MODEL
System model
K(t)
∫
φM(t)
yI(φM(t),t)
yM(t)
a
φM(t)
Beobachter
OBSERVER

Fig. 2

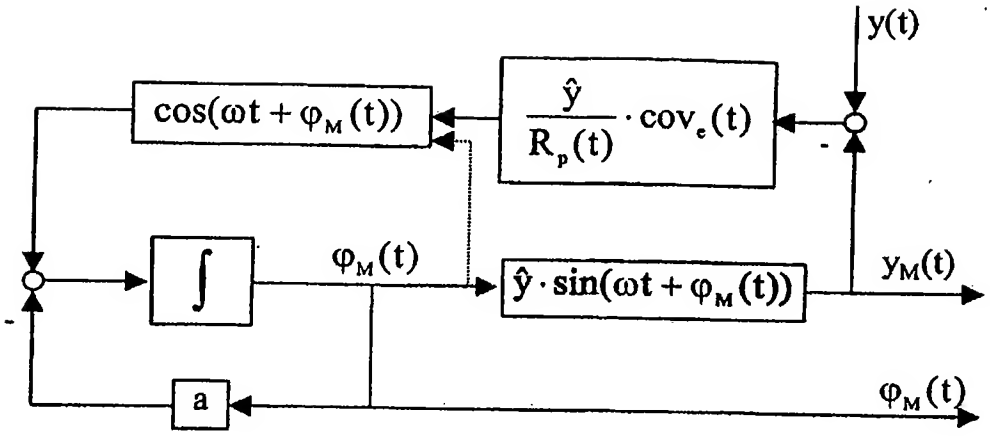
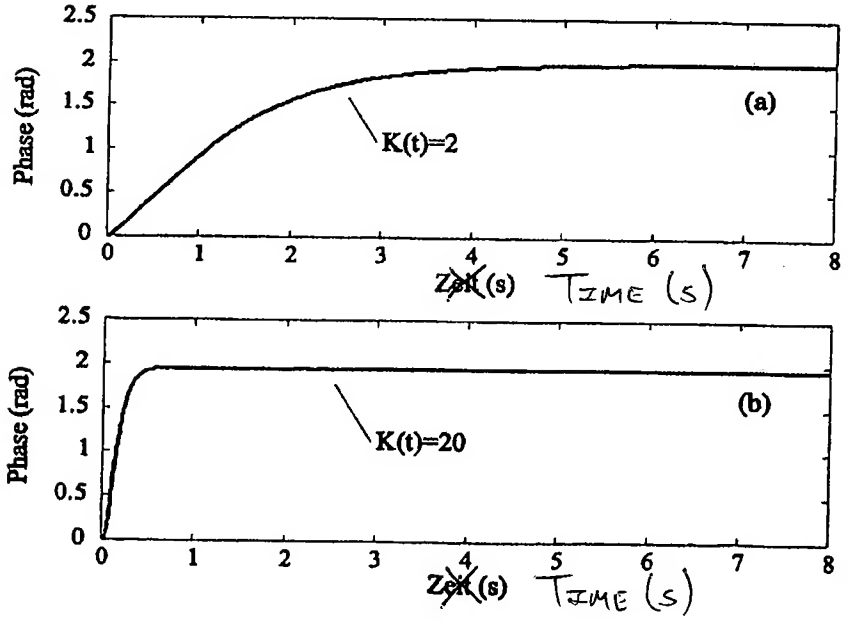

y(t)
$\cos(\omega t + \varphi_M(t))$
$\frac{\hat{y}}{R_p(t)} \cdot \mathrm{cov}_e(t)$
$\int$
$\varphi_M(t)$
$\hat{y} \cdot \sin(\omega t + \varphi_M(t))$
$y_M(t)$
a
$\varphi_M(t)$

Fig. 3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K(t)=2
(a)
Time (s)
Phase (rad)
K(t)=20
(b)
Time (s)

Fig. 4

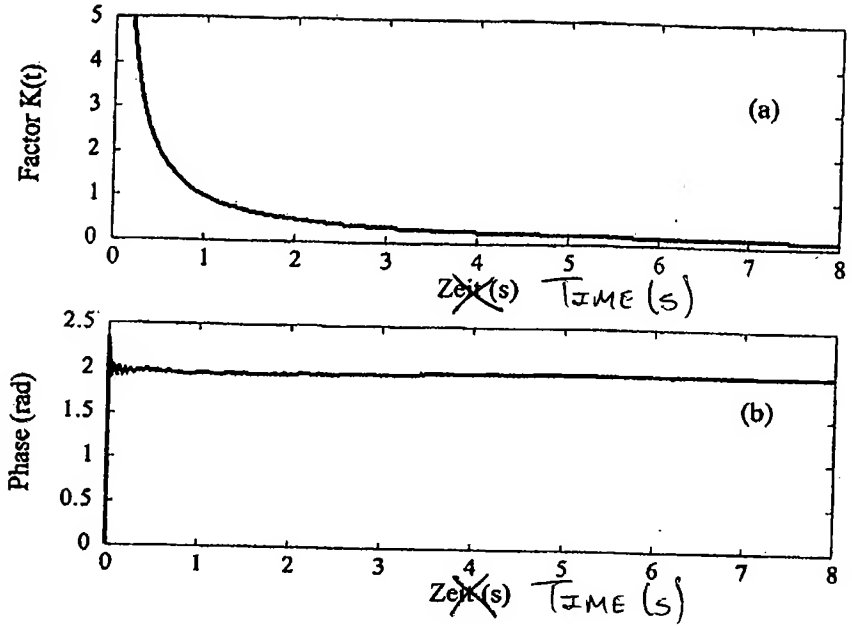
Factor K(t)
(a)
Zeit (s)
TIME (s)
Phase (rad)
(b)
Zeit (s)
TIME (s)

Fig. 5

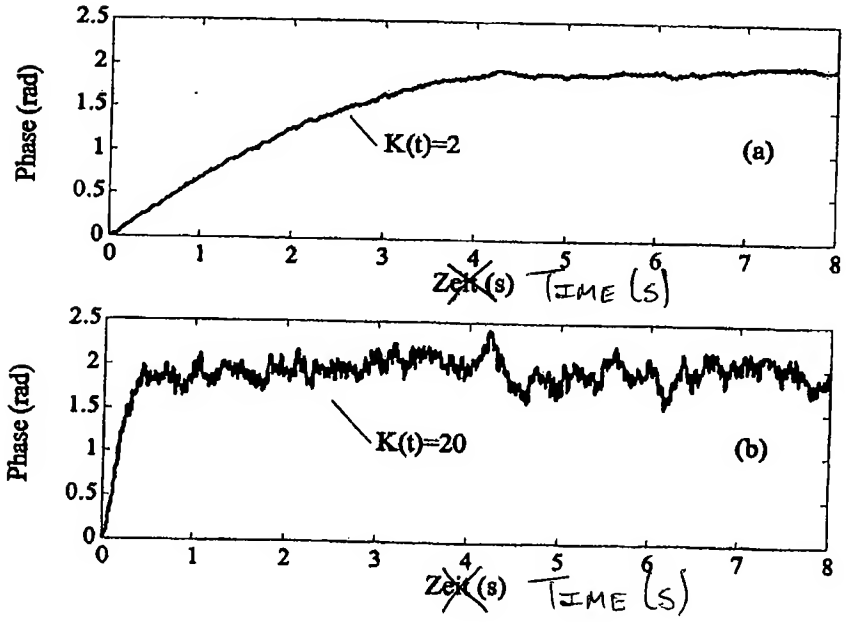
Phase (rad)
K(t)=2
(a)
Zeit (s)
TIME (s)
Phase (rad)
K(t)=20
(b)
Zeit (s)
TIME (s)

Fig. 6

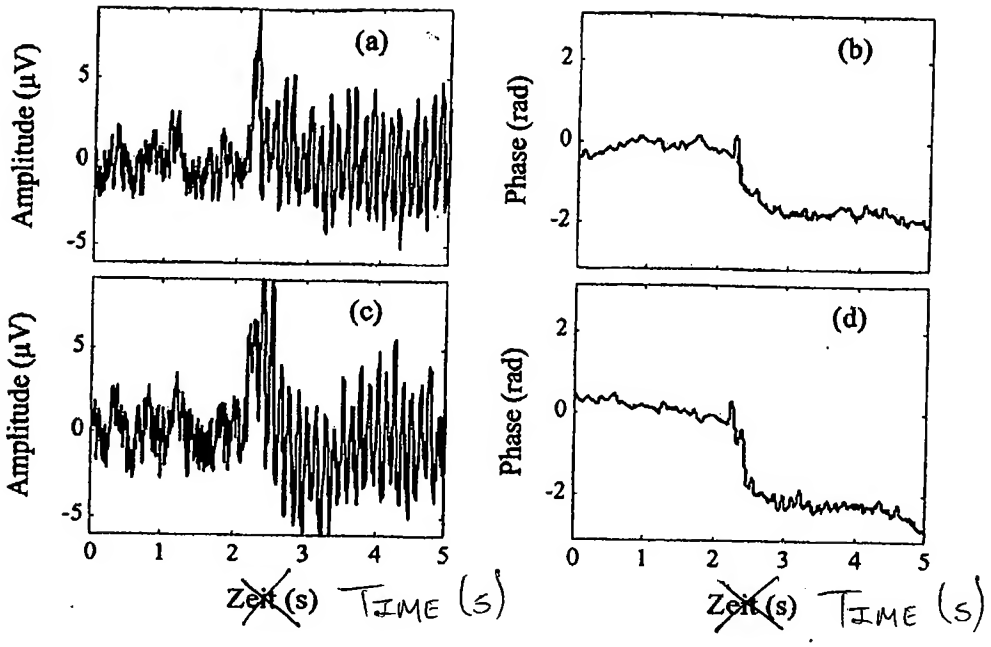
(a)
(b)
(c)
(d)
Amplitude (μV)
Phase (rad)
Zeit (s)
TIME (s)

Fig. 7

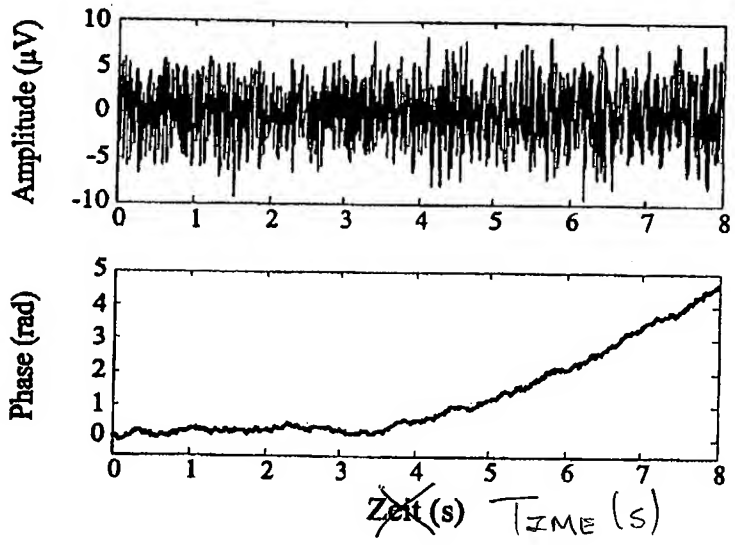
Amplitude (μV)
Phase (rad)
Zeit (s)
TIME (s)

Fig. 8